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INFLUENCE OF HYPERBARIC OXYGENATION ON KIDNEY FUNCTION IN PATIENTS WITH PURULENT-SEPTIC COMPLICATIONS

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The problem of patient treatment with abdominal purulent-septic complications in postoperative period especially with the common purulent peritonitis is one of the most urgent problems of modern surgery. Method of hyperbaric oxygenation (HBO) has gained strong positions in the treatment of abdominal purulent-septic complications in postoperative period, first of all, due to the quick utilization of nitrogen and electrolytes, that is connected with liquidation of hypoxia, improvement of cellular respiration processes, activation of respiratory enzymes, increase of the proportion of aerobic glycolysis, increase of oxidative phosphorylation in the liver. To examine functional state of kidneys in patients with abdominal purulent-septic complications in the postoperative period under conditions of hyperbaric oxygenation.

Clinical examinations and treatment of 114 patients with abdominal purulent-septic complications in the postoperative period, namely widespread peritonitis, were carried out. The control group consisted of 28 practically healthy people.

In patients with abdominal purulent-septic complications, a significant decrease in diuresis (by 40%) was observed in the first 24 hours after surgery, compared to the control group ($p<0.05$), although they were receiving traditional intensive therapy. 47 per cent drop in glomerular filtration rate (GFR) caused the decrease in diuresissince changes in the water reabsorption processes in the kidney canals did not compensate for GFR disturbances.Application of hyperbaric oxygenation as a part of the complex therapy resulted in GFR increase and, accordingly, in the growth of daily diuresis.

With purulent-septic complications, the functional state of kidneys is impaired by decrease in diuresis and GFR, and in reabsorption of sodium ions. Analysis of water excretory activity, ion- and volume-regulatory functions indicates a significant decrease in GFR, diuresis and sodium and potassium ions content in plasma in all patients due to losses through probes and drainages. Often these disorders can not be compensated for by appropriate infusion-transfusion therapy. Application of hyperbaric oxygenation increases GFR, which amplifies daily diuresis, while sodium reabsorption increases due to improved blood flow and redox processes in kidneys.

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THE INFLUENCE OF THE RATE OF ACETYLATION ON THE STATE OF THE BEHAVIORAL RESPONSES OF RATS IN CONDITIONS OF LEAD INTOXICATION

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There is speculation that the marker predisposition to action of the unfavorable factors of the environment, including the salts of heavy metals, is the type of acetylation. However, the role of individual genetic predisposition as the reasons for the sensitivity of the organism to the effects of toxic chemicals, including heavy metals, today was studied not enough.

Objective: to study the changes of behavioral reactions in rats with different types of acetylation in the conditions of acute intoxication of lead acetate.

Experimental studies were conducted on white conventional autbred sexually mature male rats, which were divided into two groups: with «quick» and «slow» type of acetylation by the test with amidopiryn. Subacute intoxication was modeled by means of intraperitoneal injection of lead acetate to experimental animals at doses of 2,5 mg/kg (1/100 DL50) and 15,5 mg/kg (1/16 DL50) for 28 days. Isotonic solution of sodium chloride (intraperitoneally) was injected to control groups of animals instead of lead acetate. In the dynamics of intoxication were studied behavioral reactions in rats: horizontal and vertical motor activity, mink reflex, emotional reactivity and integrated behavioral activity. It is established that the introduction of rats lead acetate in the dose of 2,5 mg/kg (1/100 DL 50) accompanied by inhibition of indicators of behavioral reactions with 14 days of the experiment, the «slow» and «quick» acetylation to achieve maximum to the end of the experiment. Increasing the dose of the toxicant to 1/16 DL 50 causes early behavioral changes: with 7 days of the experiment, the «fast» acetylation. More expressive changes in indicators of behavioral reactions of the toxicity of lead acetate in doses 1/100 DL 50 and 1/16 DL 50 to the end of the experiment observed in the «quick» acetylation.

The «quick» type of acetylation is a susceptibility marker to lead acetate toxic action under conditions of subacute experiment on mature rats.